

May 1906.

Natal Observations of Comet.

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*Observations of Comet c 1905 made at the Natal Observatory,
Durban.**(Communicated by E. Nevill.)*

The following observations were made by Mr. Rendell by means of a cross-bar micrometer with the equatorial refractor, aperture 8 inches, focal length 10 feet, magnifying power 50.

Date. 1906.	Greenwich Mean Time.			Apparent Difference Comet—Star.		Comet's Approx. Hour-angle.	No. of Compari- sons.	Comari- son Star.
				R.A.	N.P.D.			
	h	m	s	m	s	h	m	
Feb. 16	6	7	7	—0 46.83	—3 22.8	5 20 W	6	<i>a</i>
18	6	4	47	+1 22.02	+0 56.2	5 13 W	4	<i>b</i>
20	6	16	6	+1 33.31	—3 21.1	5 19 W	6	<i>c</i>
21	5	57	5	—1 1.14	—3 3.1	4 58 W	6	<i>d</i>
22	5	51	24	—0 11.24	—1 2.7	4 50 W	6	<i>e</i>
25	5	45	8	+0 24.64	—4 2.9	4 39 W	4	<i>f</i>

Comparison Stars.

		h	m	s		
<i>a</i>	B.D.—15° No. 119	R.A.	0 32	34.8	N.P.D.	105° 31.8 (1855°0)
<i>b</i>	B.D.—13° No. 142		0 44	0.9		103 54.3 „
<i>c</i>	B.D.—12° No. 196		0 56	33.3		102 26.8 „
<i>d</i>	B.D.—11° No. 224		1 5	1.9		101 42.8 „
<i>e</i>	B.D.—10° No. 270		1 9	59.9		100 57.3 „
<i>f</i>	B.D.—8° No. 265		1 25	37.0		98 54.0 „

[Star *b* = Lalande 1422 = Paris 1074; star *d* = Lalande 2164 = Paris 1542.]

Notes.

The observations were taken each evening as soon as possible after sunset.

The comet, although rather low in the sky, and somewhat faint, was visible on each occasion in the 3-inch finder. No stellar nucleus was seen.

The nebulosity, in diameter about 1', was fairly dense.

Faint extensions could not be detected.

On February 20 the comet appeared to be growing fainter and a little more diffused.

Estimated to be almost as faint as B.D.—12° No. 202 (mag. 10).

On February 21 it was estimated to be a little brighter than B.D.—11° No. 221 (mag. 9.7).

The observations have not been corrected for refraction or parallax.

Natal Observatory, Durban:

1906 March 23.

Note on the Parallax and Proper Motion of the Central Star in the Annular Nebula in Lyra. By Burt L. Newkirk.*(Communicated by Professor A. O. Leuschner.)*

In a recent article on the annular nebula in *Lyra* (*Monthly Notices*, vol. xlv., page 106) Professor Barnard draws the following conclusion concerning my investigation of the parallax of the central star: "As Dr. Newkirk's parallax for the central star depends upon the proper motion which he determined, and which is shown not to exist, the parallax itself must be fallacious."

This conclusion is not justified unless a solution of the equations of condition with the proper motion terms omitted indicates that no measurable parallax exists. I have made such a solution with the following results from the eight pairs of comparison stars:—

Pair	π
1-2	0.00
3-4	+0.17
5-6	+0.07
7-8	+0.02
9-10	+0.13
11-12	+0.06
13-14	+0.05
15-16	+0.07

Weighted mean parallax = $+0.067 \pm 0''.02$ mean error.

The result obtained when proper motion terms are included in the equations of condition is

$$\pi = +0''.10 \pm 0.02 \text{ M.E.}$$

If instead of averaging these eight values equations of condition be set up for the simultaneous determination of the parallax and the effect of chromatic dispersion, the above value of the parallax is reduced by $0''.003$ only.

I am fully aware of the uncertainty which attaches itself to investigations of stellar parallax, and realise the desirability of a thorough test of my results. An investigation of proper motion alone, however, does not seem likely to throw much light on the value of the parallax.

Most of the plates used in my parallax investigation were exposed during the years 1899 and 1900, and the series could not therefore form a good basis for an investigation of proper motion. This is explicitly stated on page 15.